

A new breeding site of the Critically Endangered Chinese Crested Tern *Sterna bernsteini* in the Wuzhishan Archipelago, eastern China

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Chinese Crested Tern *Sterna bernsteini* is listed as a Critically Endangered species by IUCN and BirdLife International (IUCN 2008, BirdLife International 2008). For over a century it was known only from a few specimens collected before 1937 and several unconfirmed sight records, until in June 2000 eight adults were discovered in the Matsu archipelago in eastern China (Liang *et al.* 2000, BirdLife International 2001). It was believed to breed along eastern coast of China and winter in the South China Sea. In August 2004, another breeding colony of 10–20 adults was discovered among 4,000 Great Crested Terns *Sterna bergii* in the Jiushan archipelago in Zhejiang province, eastern China, which is situated about 430 km north of the Matsu archipelago (Chen *et al.* 2005). An action plan for the species was published by the Convention on Migratory Species in 2008 (Chan *et al.* 2008), one of its major points being the need to discover whether other breeding populations or sites exist. In fact, during the breeding seasons of 2003 to 2007 several surveys were undertaken for this purpose within the potential breeding range of Chinese Crested Tern along the Zhejiang coast, as well as monitoring of breeding seabirds at Jiushan Nature Reserve, Wuzhishan Nature Reserve and other important seabird breeding sites in Zhejiang. The results suggested that the Matsu and Jiushan colonies were probably the only two extant breeding populations of the species, and that its global population was at a critical level with fewer than 50 individuals. However, in May 2008 we detected a new breeding colony of Chinese Crested Tern in the Wuzhishan archipelago.

Zhejiang province is situated in the central part of eastern China, with 3,061 islands larger than 500 m² in size, accounting for 43.9% of the total number of islands in China. The Wuzhishan archipelago is located in the mouth of Hangzhou bay on the north-west coast of Zhejiang (Fig. 1). It contains seven uninhabited islands, most of which are less than 2 ha in size and lower than 30 m in elevation. The main vegetation on these islands consists of deciduous shrubs including *Mallotus japonica*, *Pueraria lobata*, *Albizia kalkora* and *Rubus parvifolius*. As several seabirds, including Black-tailed Gull *Larus crassirostris* and the Vulnerable Chinese Egret *Egretta eulophotes*, breed in large colonies there, the Wuzhishan Archipelago Bird Provincial Natural Reserve was created by the Zhejiang government in 2001 (Wang *et al.* 2008). The Jiushan archipelago on the central Zhejiang coast is also covered by a provincial natural reserve created in 2003, where the second breeding colony of Chinese Crested Tern was discovered in 2004 and rediscovered in 2007 (Chen *et al.* 2005, 2009). Breeding attempts by the species at Jiushan in these two years failed because of egg collection by local fishermen (compounded in 2004 by typhoons). The Yushan archipelago is located just 65 km

south of the Jiushan archipelago. Since Great Crested Terns and other seabirds have been recorded breeding at Yushan it was considered to be the potential breeding site for the Chinese Crested Tern (Chen *et al.* 2009).

To undertake surveys and monitoring, we used boats belonging to nature reserves or hired fishing boats. When a seabird breeding colony was found we took pictures and landed on the island to confirm the species present, population sizes and breeding status. At the end of May 2008, when we monitored breeding seabirds in the Wuzhishan archipelago in Zhoushan, we detected a breeding colony of Great Crested Tern on two adjacent islands. We anchored our boat 80 m away from the breeding islands. After the colony settled down, we checked it with binoculars and took photos. By these means we confirmed that the Chinese Crested Tern was present and evaluated numbers in the colony. From then on we visited the islands about every three days until the end of August when the birds dispersed. In order to determine that the Chinese Crested Terns at Wuzhishan had not simply moved from the colony in the Jiushan archipelago, we also carried out monitoring on breeding seabirds in the latter area over the same period. In the 2009 breeding season, Chinese Crested Tern was again recorded breeding in the Wuzhishan archipelago. From May to August we continued the monitoring and surveys in the Wuzhishan, Jiushan and also Yushan archipelagos.

In 2008, Great Crested Terns were recorded arriving Wuzhishan in late May. In early June, birds began to assemble and laid eggs at two nearby islands (0.5 km apart): Yaqueshan and Wumaoshan. On 25 June, we landed on these islands and confirmed 315 pairs of Great Crested Tern and one pair of Chinese Crested Tern breeding on Yaqueshan, and 166 pairs of Great Crested Tern and one pair of Chinese Crested Tern breeding on Wumaoshan. Each of the two pairs of Chinese Crested Tern and most of the Great Crested Terns successfully reared one fledgling during this breeding season, and left the Wuzhishan archipelago in late August. However, no Chinese Crested Terns or Great Crested Terns were recorded at Jiushan Archipelago during this breeding season.

In 2009, Great Crested Terns were again first recorded in late May in the Wuzhishan archipelago, and again Chinese Crested Terns were identified in the colony. On 15 June, one pair of Chinese Crested Terns was documented breeding alone on Wumaoshan, with another pair and a helper breeding alongside 460 pairs of Greater Crested Terns on Mantoushan island, which is 240 m from Wumaoshan, and which also held some 60 pairs of Chinese Egret, 40 pairs of Little Egret *Egretta garzetta* and 50 pairs of Black-tailed Gull. The only seabirds

breeding on Yaqueshan in 2009 were 30 pairs of Black-tailed Gull. Why the mixed breeding colony shifted islands between years is unknown. The two pairs of Chinese Crested Terns and most Great Crested Terns successfully bred in 2009 and duly left in late August, but there was still no Chinese Crested Terns or Great Crested Terns recorded in the Jiushan or Yushan archipelagos.

Does the finding of breeding Chinese Crested Tern in the Wuzhishan archipelago indicate a new breeding population or simply a new breeding site? We believe it indicates the latter, because (1) we have carried out long-term monitoring on breeding seabirds in the Wuzhishan archipelago since 2002, and only small breeding colonies (no more than 20 adults) of Great Crested Terns were recorded before the appearance of this large mixed breeding colony of Chinese Crested Terns and Great Crested Terns; (2) no breeding Chinese Crested Terns or Great Crested Terns were recorded in the Jiushan or adjacent Yushan archipelagos after the large mixed breeding colony occurred at Wuzhishan; and (3) the first occurrence of large breeding colonies of Great Crested Terns at Wuzhishan was actually in early August 2007 (Wang *et al.* 2008), following the breeding failure and abandonment of the colony at Jiushan in early July (Chen *et al.* 2009).

As a breeding site for Chinese Crested Terns Wuzhishan has some advantages over Jiushan. First, the nature reserve of Wuzhishan was created earlier than at Jiushan, so local people there have greater predisposition to bird conservation than in Jiushan. In recent years, breeding seabirds at Jiushan still suffered occasional egg poaching, which has seldom happened at Wuzhishan in

recent years. Second, Wuzhishan is smaller in area and number of islands, and the breeding islands are closer, so it is easier to monitor and patrol. Third, fishery activities around Wuzhishan are less frequent than in Jiushan, resulting in less disturbance and food shortage. Even so, as the breeding site of a Critically Endangered species, Wuzhishan also has some disadvantages. First, as a provincial nature reserve it only has one full time staff member and one boat, insufficient for the conservation of the terns. Second, it is a sight-seeing venue known as 'the bird islands', so every summer tourists visit to watch birds, which causes disturbance.

Even though many surveys have been conducted since the Chinese Crested Tern was rediscovered in 2000 (Sun *et al.* 2003, Jiang *et al.* 2005, Zhang *et al.* 2006, Chen *et al.* 2009), these are still the only two breeding populations documented. The Matsu population consisted of fewer than eight adults until 2007, when after several years of rigorous conservation it began to increase and reached 20 adults in 2008 (Nownews 2008, Chen *et al.* 2009). Data from 2009 have not yet been released, but 17 adults were sighted in May at the Minjiang estuary, an important habitat for breeding seabirds in the Matsu archipelago. In contrast, the situation in Zhejiang is not so promising. In 2004 the population of Chinese Crested Tern was 10–20 adults, but as noted above breeding completely failed (Chen *et al.* 2009); in 2007 only eight adults were present and again there was total reproductive failure. After moving to Wuzhishan the population has consisted of only four adults. The maintenance of the Zhejiang population is clearly very important, however. Although we still have no idea about the age of first breeding in Chinese Crested Tern, Crawford *et al.* (2002) showed that it is three years in most Great Crested Terns, and according to our studies Chinese Crested Tern generally lays one egg each season. Successful breeding in 2008 and 2009 is encouraging for the Zhejiang population, but it has reached a critically low level, and recovery will take a long time.

In summary, we now know of two breeding populations of Chinese Crested Tern, three breeding sites and four important areas (the Matsu, Jiushan and Wuzhishan archipelagos and the Minjiang estuary). Of these, only Matsu is properly protected. The importance of the other three areas must be addressed with more resources allocated for better monitoring and management, both of the species and of the general environment, particularly at Wuzhishan and any additional breeding grounds discovered in the future. Egg collection and disturbance at the tern colonies should be strictly prohibited. Meanwhile, conservation awareness and education work targeted at both local government and the fishermen and restaurants are important and urgent. Recently a monitoring and education programme on the Chinese Crested Tern along the Zhejiang and Fujian coast was initiated by BirdLife Asia Division and Hong Kong Bird Watching Society working with Zhejiang Wildbird Society and Fujian Birdwatching Society.

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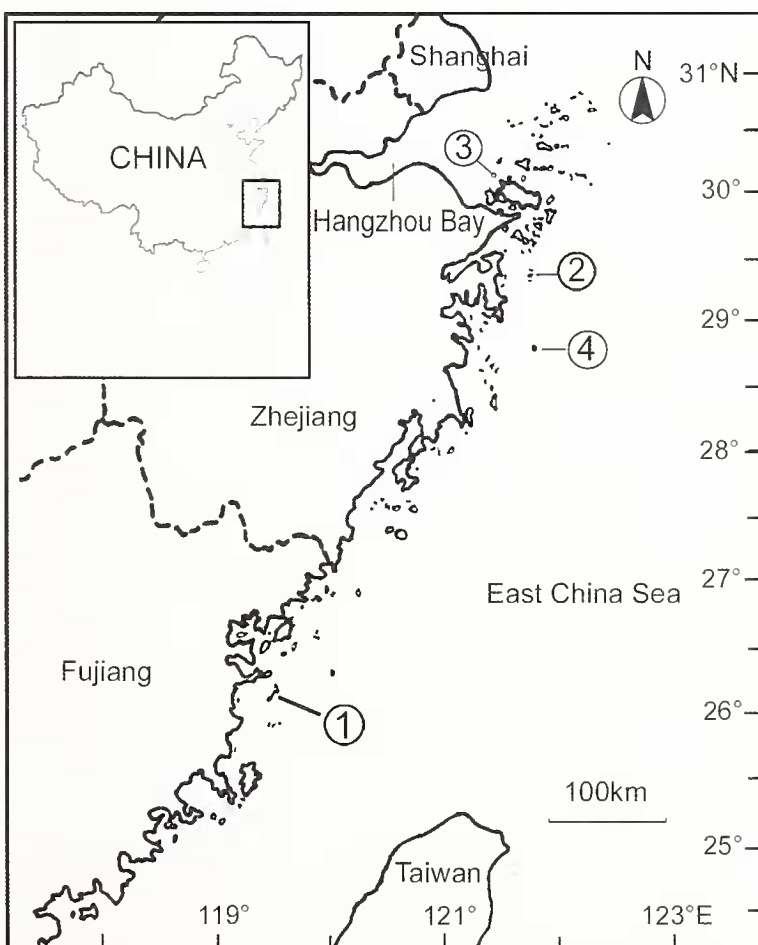


Figure 1. The study area for the Chinese Crested Tern along Zhejiang coast, east China. (1) Matsu archipelago, (2) Jiushan archipelago, (3) Wuzhishan archipelago, (4) Yushan archipelago.

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Confirmation of Long-billed Wren Babbler *Rimator malacoptilus* in Nepal

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A morning bird walk in east Nepal on 3 June 2009 produced a striking brown bird, subsequently identified as Long-billed Wren Babbler *Rimator malacoptilus*, at c.1,770 m on the north slope of Chitre Danda (= Chitre Ridge) (GPS coordinates: c.200 m east of 27°31.880'N 87°02.824'E) in the Sankhuwa Khola watershed, c.1 km south-west of Sigidim village, Bala Village Development Committee, Sankhuwasabha District. The area is located in Makalu-Barun Buffer Zone (MBBZ), which adjoins Makalu-Barun National Park (MBNP) to the south and east.

The bird was observed on two occasions and heard several times from 08h32 to 08h42. It appeared suddenly in a dim gap in the centre of a trailside thicket c.0.5 m from the periphery, and was initially observed for c.1 minute from a distance of 2.5 m using 10×42 binoculars. The bird then disappeared to a hidden perch in dense tangles, estimated by its singing (*per* Grimmett *et al.* 1998) to be 4–5 m away. After 3–4 minutes the bird

returned silently and unobtrusively to its initial perch for longer (3–4 minutes) views.

When first observed more or less laterally in dim light, dorsal plumage characters were clearly evident. The most immediate and striking feature was a long dark grey, slightly decurved bill (approximately the length of the head), giving the bird a top-heavy appearance. The brown upperparts were finely streaked with pale brown from the top of the head into the mantle. The uppertail, rump and wings were uniform brown, with no sign of spotting, streaking or barring. When the bird turned further to the side a stubby undertail was seen to be rufescent-brown, the brightest brown in the plumage. A dark moustachial stripe and indistinct malar stripe (Grimmett *et al.* 1998) went unnoticed before the bird flew away.

On return to its perch the bird was viewed for a second time through binoculars and by field assistant Birendra Rai. A more ventral aspect clearly showed most of its underparts. The throat appeared whitish; the centre of